



ESC ***Energy Services Coalition***



- ESC and Performance Contracting Overview & Lewis Palmer School District Project.
Carl Hurst, Siemens Building Technologies, Colorado ESC Member 303-568-7138
- Matthew Dickey, Gary Berngard, Johnson Controls, Colorado ESC Member 303-588-9830
- Performance Contracting Financing
Karen Keeler, All American Investment Group, Colorado ESC Member, 303-623-5100
- Rebuild Colorado, Linda Smith, Governors Office of Energy Management and Conservation, 303-894-2383





U.S. Department of Energy
Energy Efficiency and Renewable Energy

ESC ***Energy Services Coalition***

A joint partnership of industry and government

- Energy Service Companies
- State Energy Offices

Goals:

- Educate customers about performance contracting
- Streamline the process...make it easier to do a project
- Raise the bar of industry standards
- Open new markets to performance contracting
- Speak from a united industry voice

www.escperform.org





Performance Contracting...Quick review

 **A means of procurement...**

...a methodology of financing a capital improvement project

 **A means of restoration...**

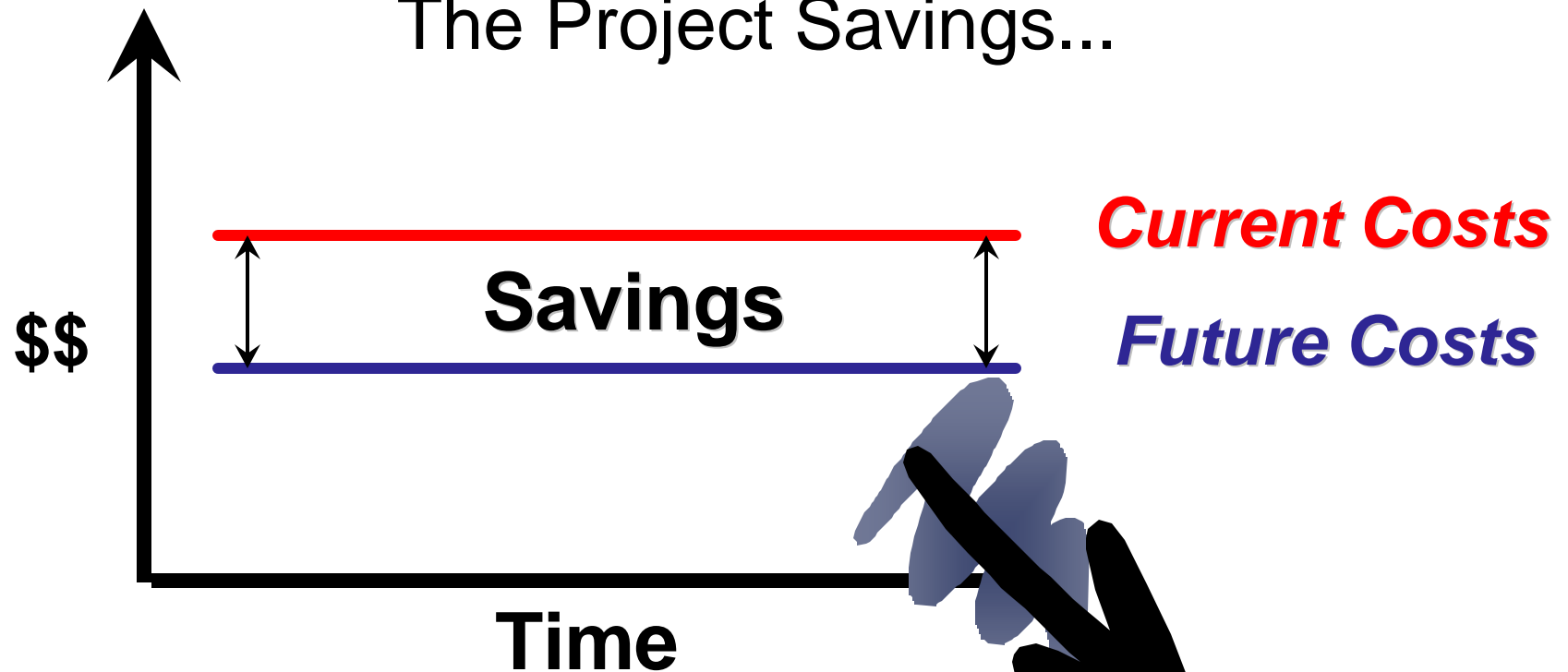
...a mechanism for facility and technology infrastructure upgrades and modernizing

 **A means of partnering...**

...a relationship of mutual accountability focused on business objectives



The Project Savings...



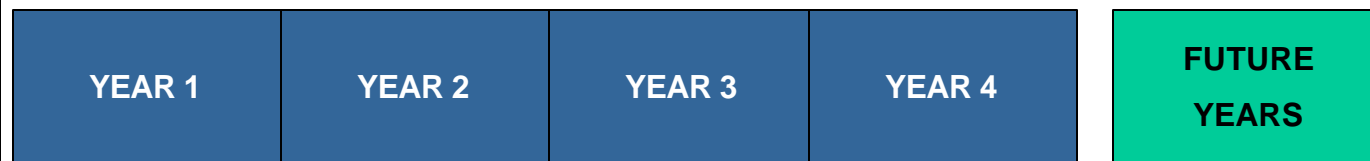
*The savings is the
difference in costs*



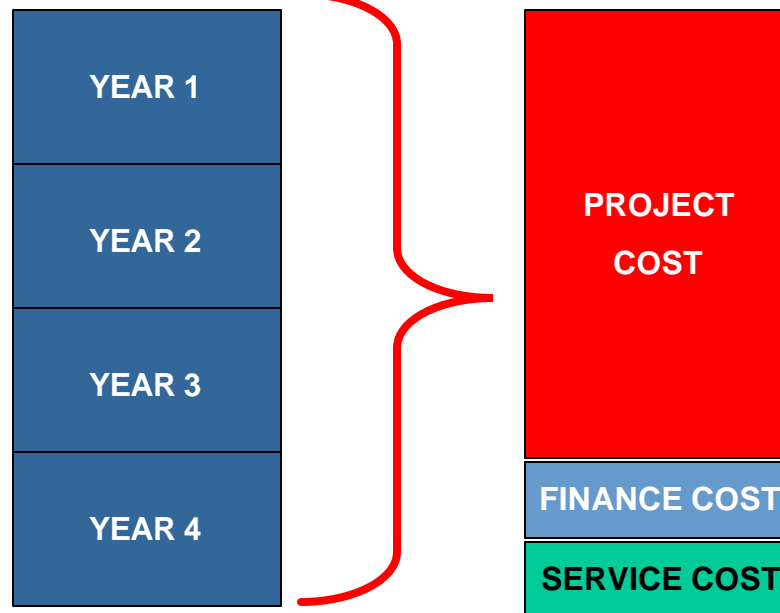


Savings

Current Costs

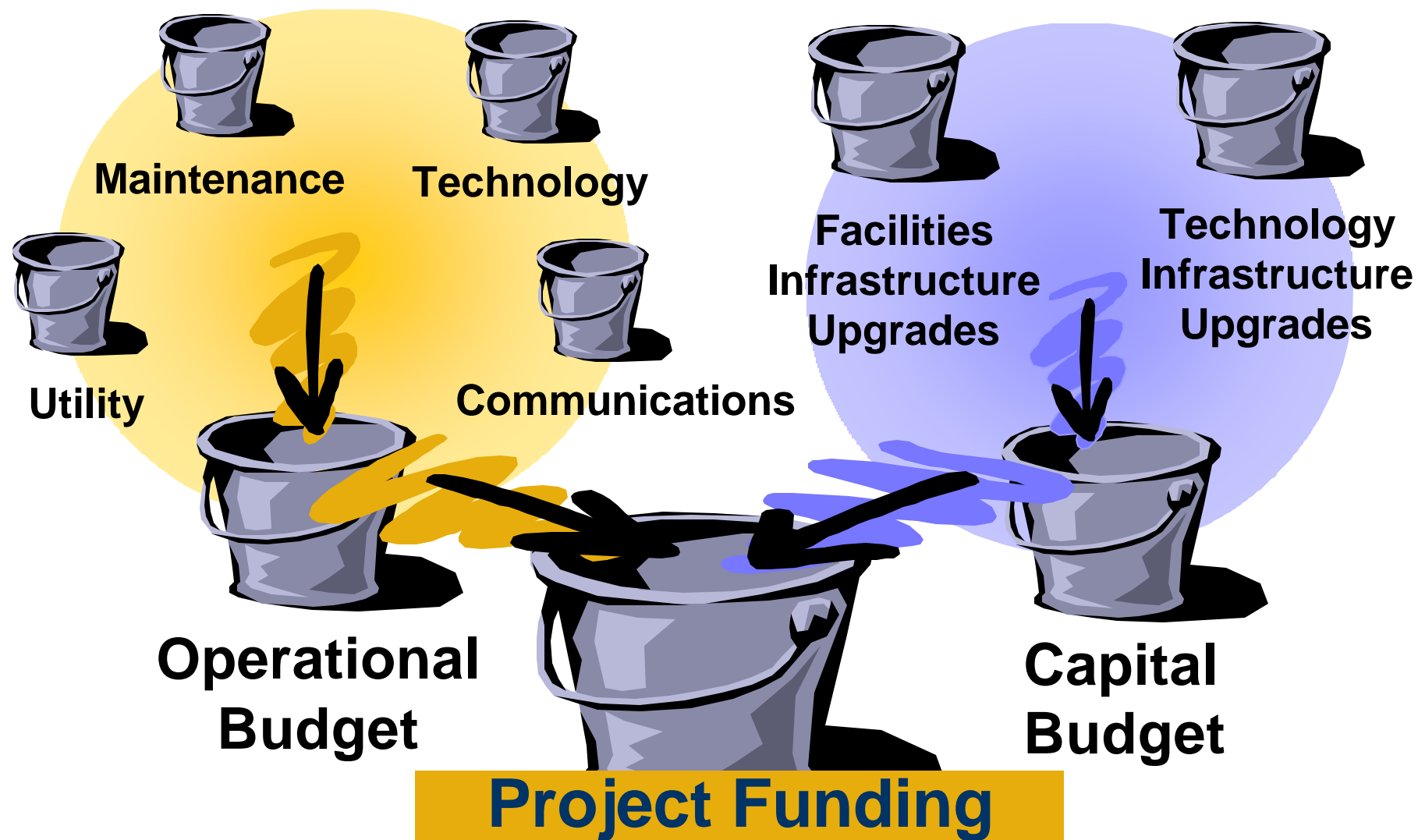


Future Costs





The Opportunity Buckets...





Lewis Palmer School District #38 PC Project

Critical Issues:

- ✍ Major renovation of historic administration building
- ✍ Limited capital budget
- ✍ Aging facilities
- ✍ Deferred maintenance
- ✍ Rising energy costs
- ✍ Rising maintenance costs



Lewis Palmer School District #38 PC Project

The renovation of the administration building was enabled by a District wide PC project.

✍ Project cost: \$3.4 million

✍ Project annual savings: \$163,000

✍ Funded by energy and operational savings with District capital reserve fund infusion.

✍ 62% PC funding, 38% capital infusion



Lewis Palmer School District #38 PC Project

Facility Improvement Measures Completed:

- ✍ Lighting retrofit
- ✍ Air handler upgrades
- ✍ Water conservation measures
- ✍ Building automation enhancements
- ✍ Add air conditioning to elementary school
- ✍ Ground Source Heat Pump System at Admin Building



Lewis Palmer School District #38 PC Project

Ground Source Heat Pump System at Admin Building

- ✍ 37 heat pumps
- ✍ 42 ground heat transfer wells
- ✍ 80 tons cooling, 1000 MBTUs heating
- ✍ Annual operating cost savings \$7,500
- ✍ Additional cost of system \$85k



U.S. Department of Energy
Energy Efficiency and Renewable Energy

Lewis Palmer School District #38 Project

Contacts:

Joe Subialka, Executive Director, Financial Services

719-488-4703

Jim Carter, Supervisor of Maintenance

719-488-4710

Carl Hurst, Siemens Building Technologies

303-568-7138



U.S. Department of Energy
Energy Efficiency and Renewable Energy

High Performance Design & Technologies Schools Seminar October 21, 2003 Matthew Dickey, Gary Berngard

1. Extending School Construction Bonds with Performance Contracting
2. Life-Cycle (Operations & Maintenance) Considerations



Extending School Construction Bonds with Performance Contracting

- Most school bond issues don't cover everything...
- Combining PC with a school bond issue can extend impact by ...
 - Using savings to cover additional improvements
 - May allow you to complete a bond-scoped item that cannot be done due to funding shortfalls or cost over-runs



Case Study – Academy 20 School District Colorado Springs, CO

- JCI selected in late 2002 as performance contracting (PC) provider for D20
- Bond project already underway (bond passed; projects in final design stage)
- D20 wanted to see if/how could interface current bond and PC
- Selected 4 schools for lighting retrofit pilot project --
 - (1) High School
 - (1) Middle School
 - (2) Elementary Schools



- Bond covered roughly \$150K of miscellaneous lighting improvements in selected areas
- PC identified \$300K of additional energy efficient measures
- Combined available bond funds to extend impact to a total of \$450K



- PC pilot met/exceeded expectations –
 - Improved lighting levels & aesthetics
 - Measured pre & post retrofit energy consumption
- Currently evaluating extension of PC project –
 - Comprehensive mechanical and electrical upgrades
 - Work in conjunction with current bond as a result of favorable results on pilot initiative



Life-Cycle Operations & Maintenance Considerations

- Initial construction goals --
 - At or below construction budget
 - On-time completion
- On-going operations goals --
 - At or below norms for on-going operating expenses
 - Easy to operate & maintain
 - Reliable



Commonly Accepted (typical) Facts --

- Insufficient staff to keep up with deferred maintenance
- Majority of schools perform only reactive maintenance as opposed to more cost-effective pro-active maintenance
- Training needs and tools are not priorities



Commonly Accepted (typical) Facts – (cont.)

- Majority of public schools report experience indoor air quality problems
- Inadequate ventilation (lack of O₂) and general discomfort major contributors to student and teacher productivity
- 49% increase in reported cases of children with asthma since 1990



Challenge Questions

- Assuming you have problems now...
 - Do you plan on fixing the problems as part of a PC initiative?
- If your problems were (partially) attributable to deferred or lack of maintenance...
 - What are your plans for future operations & maintenance (O&M) to ensure



Suggestions

- Assess O&M practices & needs at least as often as you assess facility needs
- Fix problems as part of your efficiency (cost-savings) efforts
- Don't limit your O&M horizon or plans to measures performed under a PC or bond project
- Develop maintenance plans before automating through CMMS



U.S. Department of Energy
Energy Efficiency and Renewable Energy

Financing Energy Efficiency Projects

Performance Contracting for Colorado
School Districts

Karen Keeler



Performance Contracting = Self Supported Debt

- Finance Terms of 1-12 Years
- Debt Service is 100% Covered by Annual Project Savings
- Additional Savings can be Applied to New Capital Projects or Capital Costs



Financing Options for Colorado Schools

- Internal Financing
- Debt Financing (TABOR Considerations)
- Lease Purchase Financing



Combining Financial Resources to Support Performance Contracts

- Effective Application of Utility Incentives
- Combining Bond Proceeds and Lease Purchase Arrangements on Capital Projects
- Financing New Construction Utilizing Performance Contracting



Performance Contracting:

Colorado Projects

Academy 20 School District (\$0.5 mill)*

Aurora Public Schools (\$0.26 mill)

Denver Public Schools

East Otero School District (\$1.2 mill)

Englewood Schools (\$0.9 mill)

Fort Morgan School District (\$2.5 mill)

Jefferson County School District (\$1.3 mill)

Lewis-Palmer School District (\$2.1 mill)*

Mapleton Schools (\$1.2 mill) Plainview School District (\$0.15 mill)

Platte Canyon School District

Pueblo 60 School District (\$3.2 mill)

St. Vrain Valley School District

Stratton School District (\$0.4 mill)

Thompson School District (\$3.2 mill)

West Grand School District (\$0.4 mill)

Widefield School District (\$2.6 mill)

**** Indicates projects in process, not yet completed***